



SUMMARY OF TOITŪ CARBONREDUCE
CERTIFICATIONⁱ
FOR ORION NEW ZEALAND LIMITED

Orion

Summary for 01 April 2021 to 31 March 2022

TOITŪ CARBONREDUCE ORGANISATION CERTIFIED: ORION NEW ZEALAND LIMITED EXCLUDING ORION VENTURES LIMITED

Toitū carbonreduce means committing to ongoing reductions while achieving annual measurement for at least the Toitū mandatory emissions.ⁱⁱ Connetics Limited is included in the operational footprint of Orion and its footprint will be entirely offset, making it net carbonzero compliant.



Measured emissions to **ISO 14064-1:2018** and [Toitū requirements](#)



Managing and reducing against [Toitū requirements](#)

This report provides a summary of the annual greenhouse gas (GHG) emissions inventory and management report for Orion New Zealand Limited as part of the annual work to achieve Toitū carbonreduce certification. Full details of the annual achievements, commitments, and verification are available on request from Orion New Zealand Limited.

The entities within this report will be referred to as follows:

Orion New Zealand Limited comprising both Orion and Connetics together "Orion group"

Orion New Zealand Limited "Orion"

Connetics Limited "Connetics"

ACHIEVEMENTS

These achievements have been verified in line with ISO 14064-3:2019 and Toitū carbonreduce Programme Technical Requirements for the 01 April 2021 to 31 March 2022 measurement period.

EMISSIONS MEASUREMENT

Orion New Zealand Limited's greenhouse gas emissions for this year (01 April 2021 to 31 March 2022) were 16,833.30 tCO₂e. Orion New Zealand Limited has measured the emissions resulting from its operational activities, purchased energy, and the key impacts from its value chain activities, including business travel, freight, and waste sent to landfill.

The annual inventory is detailed in the following table.

Category (ISO 14064-1:2018)	Scopes (GHG Protocol)	GHG emissions (tCO ₂ e)		
		Base Year 2019/2020	Previous Year 2020/2021	Current Year 2021/2022
Category 1: Direct emissions	Scope 1	2,829.19	2,519.78	2,733.57
Category 2: Indirect emissions from imported energy	Scope 2	14,078.96	13,784.01	13,808.70
Category 3: Indirect emissions from transportation	Scope 3	231.28	114.06	223.70
Category 4: Indirect emissions from products used by organisation	Scope 3	66.56	89.77	67.33
Category 5: Indirect emissions associated with the use of products from the organisation	Scope 3	0.00	0.00	0.00
Category 6: Indirect emissions from other sources	Scope 3	0.00	0.00	0.00
Total gross emissions		17,205.98	16,507.62	16,833.30
Category 1 direct removals		0.00	0.00	0.00
Certified renewable electricity certificates		0.00	0.00	0.00
Total net emissions		17,205.98	16,507.62	16,833.30

The operational GHG emission sources included in this inventory are shown in Figure 1 below.

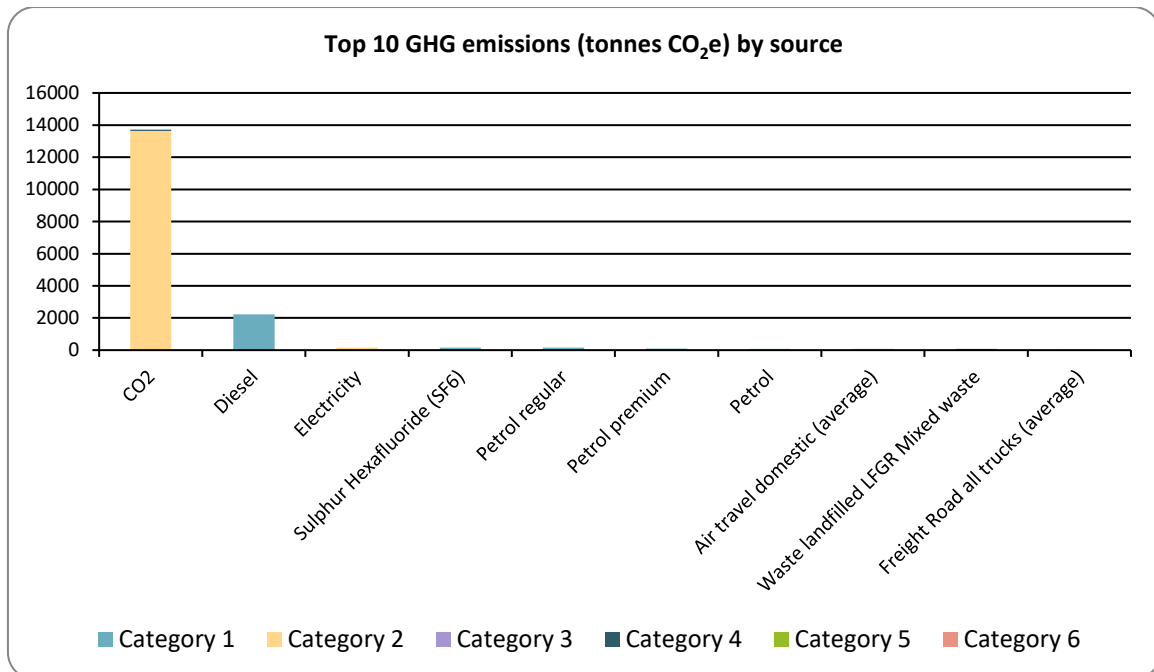


Figure 1: Top 10 GHG emissions (tonnes CO₂e) by source

SCOPE OF MEASURED INVENTORY

CONSOLIDATION APPROACH

An equity share consolidation approach was used to account for emissions. Organisational boundaries were set with reference to the methodology described in the GHG Protocol and ISO 14064-1:2018 standards. ⁱⁱⁱ

An equity share consolidation approach was used to account for emissions.

Connetics is a wholly owned subsidiary of Orion, so the decision has been made to bring Connetics into Orion's emissions management regime. Orion and Connetics also have consolidated financial accounts, however, it should be noted that there is no operational control over Connetics by Orion.

Connetics has its own separate and independent governance system, including a separate Board, which makes independent governance decisions in the best interests of Connetics. However, we do note that:

- the Orion Board appoints the Connetics Board
- Connetics takes Orion's purpose and objectives into account when making decisions

The relationship between Connetics and Orion is commercial and certified to comply with Commerce Commission 'related party' and 'arm's length' rules. Certification of this is contained in the FY20 'Information Disclosure' document.

As Connetics' sole shareholder, Orion provides a yearly letter of expectation that provides a high-level indication of the desired business strategy for Connetics - this can include a requirement to achieve carbon neutrality or other carbon certification. It does not include directions as to how any goal is achieved by Connetics.

Orion group believes it is appropriate and transparent to measure and report on both Orion and Connetics emissions and undertake (where possible) reduction projects at a group level.

BOUNDARIES

Orion is owned by two local authorities - Christchurch City Council, through Christchurch City Holdings Ltd, owns 89.275% and Selwyn District Council owns 10.725%.

Orion has two wholly owned subsidiary companies - Connetics and Orion New Zealand Ventures Ltd. Connetics is the only active subsidiary company at present.

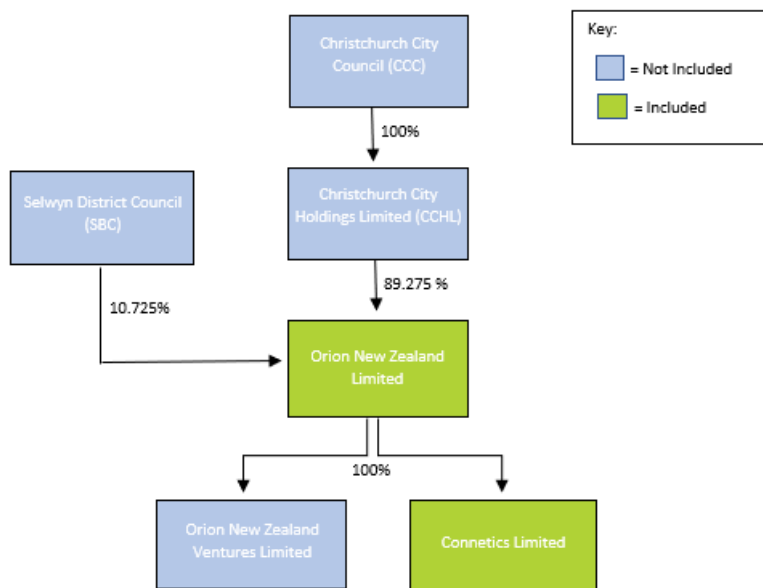


Figure 2: Organisational structure showing business units included and excluded

Orion group Excluded emissions do not exceed 5% of the total footprint within the organisation boundary stated.

Orion New Zealand Venture Ltd has been excluded from this inventory, as it has no assets and does not currently trade.

Orion

Emissions from some rental properties have been excluded. Detail on which property and the reasons for exclusion are set out in the 'business units' table.

Connetics

Buller (1 staff) - excluded except for fuel use. Further detail in 'business units' table.

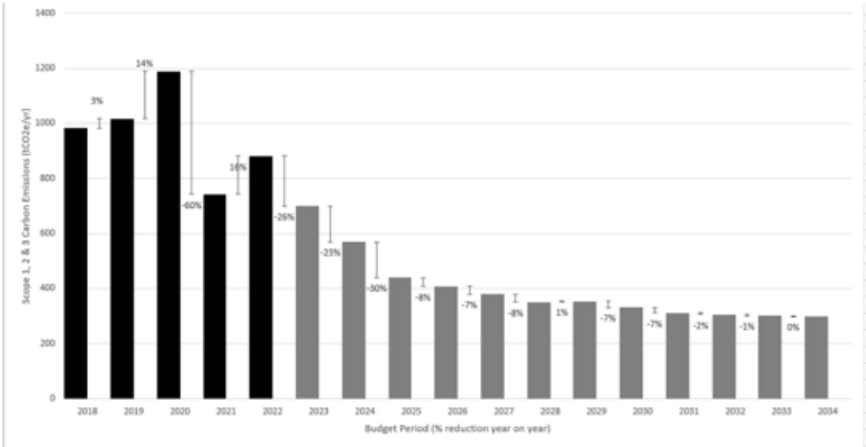
Paraparaumu (3 staff) - excluded except for waste to landfill. Further detail in 'business units' table.

MANAGING AND REDUCING

An assessment of materiality was made against the defined threshold. From this analysis it is concluded that the stated emissions are free from material error.

This is the third year of reporting under the Toitū carbonreduce programme. An absolute reduction in Category 1 and 2 emissions of 371.52 tCO₂e has been achieved against base year. An increase in emissions intensity (for Category 1, 2 and mandatory Category 3 and 4 emissions) of 0.08 tCO₂e/\$M has occurred based upon a 3-year rolling average, adjusted for inflation.

ORION



CONNETICS

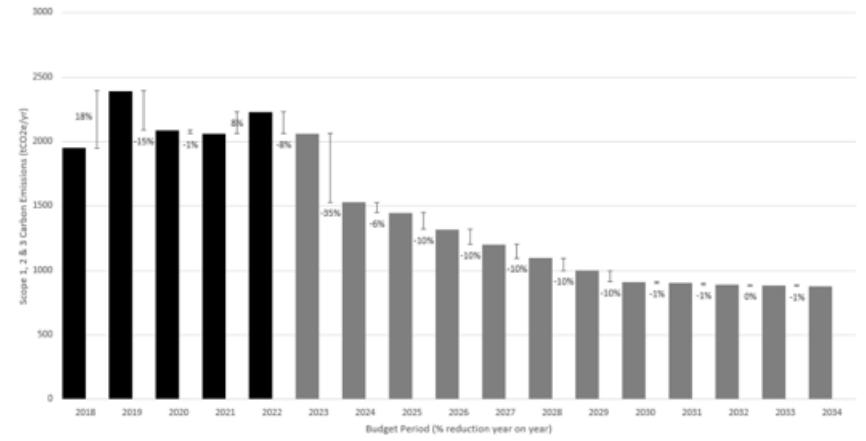


Figure 3: Performance against target since the base year

We have achieved a 5% reduction in emissions from our base year. This actually comprises a slight increase in emissions from FY21, but we look forward to FY23 as the work done during FY22 has set us up to achieve ongoing reductions in fuel use in particular.

Target name	Baseline period	Target date	Type of target (intensity or absolute)	Current performance (tCO ₂ e)	Current performance (%)	Comments
50% Reduction from baseline (excluding Category 2 indirect distribution losses)	April 01, 2019 - March 31, 2020	1/03/2030	Absolute	3,111.00	5% reduction	Overall Categories 1, 2, 3 and 4, excluding Category 1 distribution losses. We have excluded our lines losses from our reduction target as they are largely out of our control and for performance have excluded working from home emissions of 72.352 tCO ₂ e as these were not included in our baseline year. Baseline requires recalculation as a result, but this is best done for FY23 emissions as additional emission sources (i.e. commuting) will be included.
80% Reduction from baseline (excluding Category 2 indirect distribution losses)	April 01, 2019 - March 31, 2020	1/03/2050	Absolute	3,111.00	5% reduction	Overall Categories 1, 2, 3 and 4, excluding Category 1 distribution losses. We have excluded our lines losses from our reduction target as they are largely out of our control and for performance have excluded working from home emissions of 72.352 tCO ₂ e as these were not included in our baseline year. Baseline requires recalculation as a result, but this is best done for FY23 emissions as additional emission sources (i.e. commuting) will be included.
Carbon Neutral by June 2022	April 01, 2019 - March 31, 2021	1/06/2022	n/a	n/a	n/a	Overall Categories 1, 2, 3 and 4, excluding Category 1 distribution losses. We have excluded our lines losses from our carbon neutral target as they are largely out of our control.

COMMITMENTS

REDUCTION TARGETS

Orion New Zealand Limited is committed to managing and reducing its emissions. Orion New Zealand Limited's commitments, including GHG emissions reduction targets and plans, have been reviewed and are in line with Toitū carbonreduce programme requirements.

Orion New Zealand Limited are reducing our group emissions 50% by 2030 and 80% by 2050.

Orion New Zealand Limited have also set a group target to be carbon neutral across our operational emissions (excluding distribution losses) by June 2022.

Looking ahead, Orion New Zealand Limited is currently focused on the following projects.

Objective	Project	Responsibility	Completion date	Potential benefits	co-	Potential unintended consequences	Actions to minimise unintended consequence	
Group: Diesel - Fleet decarbonisation	<p>A lot of the group fleet must be able to operate in emergency situations, to enable Orion Group to fulfil it's role as a lifeline utility. However, not all vehicles are not needed for this role. If Orion Group can place some structure around when a vehicle is essential for resilience purposes, some structure can then be placed on vehicle replacements. This will enable EV's to be cycled into the fleet where appropriate and the purchase of lower emission vehicles to be prioritised as a general rule.</p> <p>A Master's project will occur during 2021 to examine these technical criteria, design trial and deployment processes and identify logistic support that is required.</p>	Orion: Network Delivery Manager Connetics: Fleet & Property & Sustainability	MEM investigation completed FY22. Use and rollout ongoing across Orion and Connetics			Vehicles not fit for purpose	Working with various people to ensure that each vehicle is fit for the role	Category 1: Direct
Group: Electricity - Introducing solar onto Connetics building	Investigate installation of solar on the roof at Waterloo Road	GM Future Energy & GM Growth and Development & Group Sustainability	Ongoing	Builds capability at Connetics for design and install of solar systems		Modern Slavery	Research into potential supplier's supply chain	Category 2: Indirect
Orion: Diesel Fleet - Reduction in Idling	Understanding the different reasons for idling and implementing different tools, ways of working and behaviour changes to reduce idling	Network Optimisation Manager (Coralie Scales)	Ongoing	More efficient equipment, tools, or process		The operations team do not reduce their idling, or they stop doing their core job	Education around how and why a reduction in idling can help the overall reduction in carbon, without compromising their day-to-day jobs	Category 3: Indirect from transportation

Objective	Project	Responsibility	Completion date	Potential benefits	co-	Potential unintended consequences	Actions to minimise unintended consequence	
Orion: Diesel Fleet Biofuel	<p>Introduce a 5% biofuel blend for use in our operator vehicle fleet, until technology evolves so better emissions reductions are available from another route.</p> <p>Our fleet vehicles are able to use a 5% biofuel without voiding their warranty.</p> <p>Because our vehicle fleet also use fleet card to fill up and biofuel is not available at the pump in the South Island, we can only achieve limited emissions reduction associated with this step.</p> <p>If it becomes apparent that EV or hydrogen technology for 4WD vehicles has evolved to the point where an operator ute could be transitioned, we will prioritise that step. The masters project in 2021 will identify testing methodology and logistic support required for alternative technologies.</p>	Operations & Fleet Manager (Richard Wilkinson Stu Kilduff)	Ongoing					Category 4: Indirect from products used
Orion: Petrol - Replace programme	Replace all petrol vehicles with electric vehicles, unless the vehicle is required to operate in emergency situations	Fleet Manager & Electricity Network Manager (Richard Wilkinson Steve Macdonald)	Ongoing					

Objective	Project	Responsibility	Completion date	Potential benefits	co-	Potential unintended consequences	Actions to minimise unintended consequence
Orion: use PHEVs as PHEVs	Ensure PHEVs are fully charged and used as PHEVs more frequently	Business responsible for PHEVs	Ongoing	reduced petrol consumption and associated costs		Reviewing work safe requirements around charging at home - could cause difficulty as requires installation of dedicated charger	Investigation of constraints and education on difference that charging correctly can make
Orion: Diesel (Generators)	Commission 10,000L and 16,000L bulk fuel storage at Papanui substation. Bulk fuel storage at Papanui enables storage of B100 for generators and B5 for fuelling operator trucks.	Operations (Gavin Bonnett Stu Kilduff)	Ongoing	If fuel can be stored in bulk, resilience is improved. Storing biodiesel rather than mineral diesel also has downstream safety and security benefits			
	Research and develop a hybrid battery/generator system	Operations (Gavin Bonnett)	Ongoing				

Objective	Project	Responsibility	Completion date	Potential benefits	co-	Potential unintended consequences	Actions to minimise unintended consequence	
Orion: Electricity -T and D losses accuracy	Currently our distribution losses are relatively intractable and managed through shifting peak load and purchasing equipment that has fewer losses when possible. There is no viable option to reduce losses currently, but we will continue to monitor and will update our approach if this changes. Distributed generation is one area we could develop, shifting generation closer to the point of use, but it will take some time for a discernible difference to become apparent from this. The loss factor is getting reviewed	Infrastructure/ Lifecycle/ Regulatory	Ongoing (loss factor review completion Oct 23)	Improved data		a high loss factor		
Orion: Electricity - building efficiencies	Introduction of building dashboard to enable more efficient energy management Our Wairakei Rd building is the largest user of purchased electricity. It is a relatively new and efficient building, so limited efficiency gains may be available, however it is important to understand whether we are taking all reasonably practicable steps to improve our efficiency. Our electricity supplier is Meridian, so the purchase of a renewable electricity certificate is being considered.	Head of Sustainability	22/06/2022	Improved data				
Orion: Air Travel - improve visibility of travel	Introduction of travel dashboard Emphasis on video conferencing wherever possible It is vital to lock in the gains made from our behaviour change during COVID-19. Some travel will always be necessary, but by improving visibility of travel and promoting a questioning culture we should be more efficient in when and how we choose to travel.	Group CEO (Nigel Barbour)	Ongoing	Reduction in Accommodation				

Objective	Project	Responsibility	Completion date	Potential benefits	co-	Potential unintended consequences	Actions to minimise unintended consequence	
Orion: Waste to landfill - Reduce waste consumption	Ongoing communication around waste sorting. We introduced a green waste system in FY20. Ongoing behaviour change is necessary to use it more and increase the amount (and type) of recycling that occurs. A waste diagnostic will occur FY22/FY23 to gain more insight into waste and the potential reductions	Contract Manager (Buildings & Grounds) (Brandon Dudley)	FY2021 and ongoing					
Orion: Procurement and suppliers	Where possible use suppliers who subscribe to a carbon measurement system. Continue investigative work in the 'Lifecycle Practices' team to quantify carbon associated with assets used. Continue aligning works package quantity surveyor detail with an embodied carbon 'score' for assets included in a package as a way to enable a simple carbon score associated with designs to be produced.	Procurement & Lifecycle	Ongoing					
Orion: SF ₆ - Reduction in SF ₆ as a liability	Orion currently uses SF ₆ switchgear on 5 11kV assets and other 66kV assets. During FY21 we are costing the introduction of an SF ₆ -free transformer for our 66kV network.	Head of Engineering	Ongoing					
Connetics: Diesel - Reduce vehicle emissions	When petrol vehicles reach the end of their lifecycle, replace with EVs or PHEV's	Fleet & Property Manager	Ongoing			If PHEV's are not plugged in enough, we are not making the intended reductions	Education for driver on their new vehicle	

Objective	Project	Responsibility	Completion date	Potential benefits	co-	Potential unintended consequences	Actions to minimise unintended consequence	
Connetics: Diesel - Reduce Diesel Emissions	Investigate tanker delivery and refuelling of B5 fuel at Connetics yard with Greenfuels.	Fleet & Property Manager	Ongoing	Fuel up onsite		Tanker required to drive to Connetics yard, warranty concerns	n/a	
Connetics: Waste - Reduce Waste to landfill and clean up mixed waste streams	Investigate waste streams and reduction opportunities through education and management	Sustainability	Ongoing	General waste education		None anticipated	nan	
Connetics: Electricity - Investigate enabling home charging to reduce vehicle emissions and open up a better use case for EV's	Investigate wall boxes to allow for our people to safely charge at home	Fleet & Property Manager	Ongoing			Higher electricity use	n/a	
Completed Projects								
Orion: Diesel - Reduce diesel consumption in fleet	Introduction of Eroad enables targeted behaviour change initiatives, such as reducing idling time.	Fleet Manager & QHSE	Completed FY22	Reduced Petrol, Positive behaviour changes				
Orion: Diesel - Reduce diesel consumption in generators	Introduce B100 in diesel generators Two trials have been carried out with good success on the use of Greenfuels B100 in our diesel generators. The third trial is use of the fuel in a live job. Generators are used to support our network operation and minimise impact of outages on our customers. It is vital that any system developed is robust, so we are analysing any step taken in this area carefully.	Operations (Gavin Bonnett Stu Kilduff)	Completed FY22	Carbon Reduction (23 tCO ₂ e) Capability in Enabling Carbon Reduction in customers who use generators to respond to control period pricing Resiliency (Biodiesel Storage)		Cold weather choking on B100 in AP & Coleridge	Use in city / use blend in winter / pre-heat fuel	

Objective	Project	Responsibility	Completion date	Potential benefits	co-	Potential unintended consequences	Actions to minimise unintended consequence	
Connetics: Diesel - Reduce Idling	Investigate comparative CROI (carbon return on investment) for replacing PTOs on lift trucks with electric versions or purchasing a new electric lift truck. Take action on whichever initiative achieves the best CROI.	Connetics Sustainability	Completed FY21	Noise reduction		None anticipated	n/a	
Orion: Electricity - Optimise EV Charging with load	Load management of electric vehicle charging at 565 Wairakei Road Vehicle charging can be optimised to avoid charging at peak times when fossil fuel generation is more likely. This is a pilot project, with the intent to expand.	Network Analyst (Richard Moylan)	Completed FY22	Potential reduction of connection constraints, avoidance of charging during peak periods - which uses more carbon intensive electricity		Concerns about ability to travel for work if vehicle not charged completely	App used which enables employee to override control if needed (e.g. if leaving the office shortly after arriving)	
Group: Diesel - Fleet decarbonisation	A lot of the group fleet must be able to operate in emergency situations, to enable Orion Group to fulfil its role as a lifeline utility. However, not all vehicles are not needed for this role. If Orion Group can place some structure around when a vehicle is essential for resilience purposes, some structure can then be placed on vehicle replacements. This will enable EV's to be cycled into the fleet where appropriate and the purchase of lower emission vehicles to be prioritised as a general rule. A Master's project will occur during 2021 to examine these technical criteria, design trial and deployment processes and identify logistic support that is required.	Orion: Network Delivery Manager Connetics: Fleet & Property & Sustainability	MEM investigation completed FY22. Use and rollout ongoing across Orion and Connetics			Vehicles not fit for purpose	Working with various people to ensure that each vehicle is fit for the role	

COMPENSATION FOR EMISSIONS

Orion New Zealand Limited is committed to doing no harm while working on reducing emissions.

Orion New Zealand Limited has invested in carbon credit projects compensate for the Toitū mandatoryⁱⁱ emissions resulting from their operations this year while choosing not to offset emissions from Transmission and Distribution losses. Excluding this source does not make them eligible for carbonzero certification.

Avoidance credits: 3,199 from batch #0414, Wenchang Rural Methane Digesters Project in Hainan Province [916 (Orion New Zealand Limited) and 2,283 (Connetics Limited)]

All carbon credits have been cancelled on the Toitū Envirocare register and will be cancelled (or equivalent) on the relevant external registry within one month of certification. Specific details of cancellation, including serial numbers, will be available on the external registry: Gold Standard <https://registry.goldstandard.org/credit-blocks>

Note: Connetics Limited is included in the operational footprint of Orion and its footprint will be entirely offset, making it net carbonzero compliant.

CERTIFICATE DETAILS

Certification status:	Toitū carbonreduce certified organisation
Certificate number:	2021117J, Year 2 of 3-year certificate period
Valid until:	30 August 2024
Measurement period:	01 April 2021 to 31 March 2022
Base year:	01 April 2019 to 31 March 2020
Audited by:	Toitū Envirocare
Level of assurance:	Reasonable
Data Quality Score:	High

ⁱ ©Enviro-Mark Solutions Limited 2020.

Disclaimer: This Certification Summary Statement is a summary of the information (validated and verified for relevant components of the certification) considered for certification and the certification decision. It should not be taken to represent the full submission for certification. Whilst every effort has been made to ensure that the information in this Statement is accurate and complete, Enviro-Mark Solutions Limited (trading as Toitū Envirocare) does not, to the maximum extent permitted by law, give any warranty or guarantee relating to the accuracy or reliability of the information.

ⁱⁱ The mandatory sources that must be included in any Toitū carbon programme inventory include:

- All direct emissions from the activities of the organisation, or the part of the organisation being certified. Direct emissions come from assets owned or controlled by the organisation, such as emissions from fleet vehicles, boilers, generators, and HVAC systems.
- All emissions from imported energy (electricity, heat, and steam)
- Emissions from business travel and freight paid for by the organisation
- Emissions associated with waste disposed of by the organisation, as well as the transmission and distribution of electricity, and natural gas

ⁱⁱⁱ Control: the organisation accounts for all GHG emissions and/or removals from facilities over which it has financial or operational control. Equity share: the organisation accounts for its portion of GHG emissions and/or removals from respective facilities.